

FACTORS INFLUENCING STUDENTS' USE OF ELECTRONIC RESOURCES AND THEIR OPINIONS ABOUT THIS USE:
THE CASE OF STUDENTS AT AN-NAJAH NATIONAL UNIVERSITY

Factors Influencing Students' Use of Electronic Resources and their Opinions about this Use:

The Case of Students at An-Najah National University

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Abstract—Electronic resources are becoming an integral part of the modern life and of the educational scene, especially the high education scene. In this research we wanted to verify what influences first degree university students' use of electronic resources and their opinions regarding this use. Collecting data from 202 students and analyzing it using SPSS, we found that more than one half of the participants had high level of electronic media use and more than one third had moderate level of electronic media use. These levels of use indicate the students' awareness of the role and benefits of electronic media use. Regarding the factors that influence the students' use of electronic resources we found that the student's use of electronic resources had significant strong positive relationships with the provision of electronic resources by the academic institution. It had significant moderate positive relationships with the resources characteristics and the course requirement, and had significant weak relationships with the instructor's support and the student's characteristics. We explained these relationships as resulting from the influence of the surrounding community.

Regarding the students' opinions about the use of electronic resources, we found that the student's opinion of electronic resources has significant strong positive relationships with student's use of electronic resources, level of this use, the academic institution available facilities, student's characteristics and resources characteristics. It does not have significant relationships with the instructor's support or the course requirement. We explained these relationships depending on activity theory and its integration with ecological psychology.

Index Terms—Electronic resources, factors, influences, university students.

I. INTRODUCTION

Electronic resources are becoming an integral part of libraries' resources at academic institutions, and are expected to be used by university students in the various academic degrees. This use would increase the variety of resources available for students and which can be accessed everywhere and anytime. What influences this use that would benefit university students' academic activity? Further, what influences students' opinion about this use? This article comes to verify these two issues at An-Najah National University, which is a big university in a developing country that still suffers from occupation. Specifically, we want to examine these two issues when taking

into consideration first degree students. Regarding the factors that influence the use and opinion of students we will look at different factors: the personal characteristics of students, the characteristics of the electronic media, the provision of facilities and support by the university, and the course's requirements and teacher's directions.

A. A. The study rationale:

Reference [8] points at two aspects of current educational media: the huge investments by the educational sector on the establishment and maintenance of educational media for students and the very little and sporadic knowledge about the usage of such media in education. This research comes to provide more knowledge about this usage and to shed light about the different uses of electronic educational media at a big university in a developing country under occupation.

B. The research questions:

Students' use of electronic resources:

1. What is the level of electronic media use of first degree students in An-Najah National University?

Relationships with the use of electronic resources:

2. Is there a relationship between the characteristics of students and their use of electronic resources?
3. Is there a relationship between the characteristics of electronic resources and the students' use of them?
4. Is there a relationship between the facilities and support that an academic institute provides and the students' use of electronic resources?
5. Is there a relationship between the support that an instructor provides and the students' use of electronic resources?
6. Is there a relationship between the course's requirement and the student's use of electronic resources?

Relationships with the opinion about electronic resources:

1. Is there a relationship between the characteristics of a student and his/her opinion about electronic resources?
2. Is there a relationship between the characteristics of electronic resources and the students' opinion about them?

3. Is there a relationship between the facilities and support that an academic institute provides and the student's opinion about electronic resources?
4. Is there a relationship between the support that a teacher provides and the student's opinion about electronic resources?
5. Is there a relationship between the course's requirement and the student's opinion about electronic resources?
6. Is there a relationship between the student's use of electronic resources and his/her opinion about electronic resources?

C. *C. Research hypotheses:*

The research hypotheses for the research questions numbered 2 to 5 are:

There are significant relationships between the student's use of electronic resources and the characteristics of students, the characteristics of electronic resources, the facilities and support that an academic institute provides, the support that an instructor provides, and the course's requirement.

The research hypotheses for the research questions numbered 7 to 12 are:

There are significant relationships between the student's opinion about electronic resources and the characteristics of students, the characteristics of electronic resources, the facilities and support that an academic institute provides, the support that an instructor provides, the course's requirement, and the student's use of electronic resources.

The previous hypotheses are founded on the agreement that actions are context and situation related. Reference [9] for example, depending on various researches says that it is not possible to fully understand how people work or learn if we look at the individual without looking at the context in which they work or learn. Regarding the current research, this context includes the components: the characteristics of electronic resources, the facilities and support that an academic institute provides, the support that an instructor provides, and the course's requirement. Not only actions are situated and context related but also opinions and perceptions. This made us hypothesize that students' opinions of electronic resources are context-related.

II. LITERATURE REVIEW

A. *Use of electronic resources:*

Reference [1] examined the use of online information resources by a group of international students at Queensland University when using the library. Reference [1] describes the Central Queensland University Library web site as providing access to a wide array of online resources, including course materials, subscription-based databases, free internet sources and an online information literacy tutorial. Reference [1] says that the academic and library staffs try to promote the use of online resources by students, with the expectation that they will draw on them heavily for their learning and assessment. Participants reported extensive use of the internet and moderate use of common journal databases (*Proquest, Emerald and Infotrac*), but very limited use of specialist information sources. The participants were most effective in using the internet and least effective in using the library catalogue.

Reference [2] addressed the issue of how important full-text electronic resources are to the advanced research of undergraduate and graduate philosophy students. To examine this issue the researcher in [2] performed a citation analysis of undergraduate honors theses and masters theses completed at UNC-Chapel Hill, University of North Carolina, between 1998 and 2000. The results suggest that students participating in the research made little use of material available in full-text electronic form.

Reference [3] examined students' attitudes across three universities towards electronic information resources. The participants were 317 students who completed a questionnaire to determine their level of use of various electronic information resources. Reference [3] reported that 91% of respondents acknowledged access to a networked computer via university, while only 5.4% acknowledged access at home as well as the university. Regarding the type of electronic resources that the students used, [3] found that the most popular electronic resources were CD-ROMs and the Internet, with 80.7% and 76.7% respectively of the respondents using them. Only 37.5% of the respondents used electronic journals as an information retrieval tool. Regarding the barrier to using electronic resources, [3] found that limited time and lack of effective information retrieval skills seem to be the main barrier.

Reference [4] says that one property that hinders the use of a library's resources, particularly its electronic resources, is that the resources are not considered straightforward. This is so because (1) students have to choose a particular database and be more selective in the search words they use (2) database subjects often overlap (3) the library may have a print subscription to a certain title that is not full-text electronically, or the title may be accessible full-text through another database than the one originally searched. In contrast, an Internet search engine gives thousands of hits for a single keyword search or a specific number of keywords. This makes students use the internet search engines more than the library electronic resources. Another problem of using library electronic resources that [4] mentions is the proficiency of students in the use of computers.

B. *Factors that influence the use of electronic resources:*

Reference [5] reviewed studies done on using electronic library resources. She found that researches point at several aspects that influence the learner's use of electronic resources:

- *Status.* High school students and undergraduate students, for example, turn first to the Web for research but will change behaviors if they are given a specific assignment or are asked to use a particular resource. Graduate students are heavy and cyclical users of electronic journals, especially for research.
- *Subject discipline, for subject experts.* Scientists and business faculty members were early adopters of electronic journals and read from a variety of full-text databases and e-journals. Social scientists and humanists use both electronic resources and print and rely more on books than other fields.
- *Task.* Most high school and undergraduate students turn first to the Internet for class assignments and feel they are expert searchers. The heaviest use of electronic resources is for research.

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- *Type of institution or workplace.* Academic faculty and graduate students readily use electronic journals accessible from their office or home, but scientists in government laboratories and companies also rely on electronic and paper journals for research. Students prefer to access electronic resources through the library from home.
- *Age.* Younger users are more enthusiastic adopters of electronic resources than are older users. Younger users rely on electronic resources more heavily and rate themselves more expert in using them than do older users.
- *Gender.* There is little evidence that gender in most cultures *makes* a difference in using electronic resources.

One important conclusion that [5] makes is that students are responsive to a great degree to recommendations of specific resources made by their teachers, friends, or a librarian. In addition, convenience remains the single most important factor for information use: a user prefers an electronic journal only if it makes the work easier and gives the information needed. Further, the library policies have intentional and unintentional effects on user behavior, for example, unfettered access to electronic collections results in an increasing use and reliance on electronic resources.

C. Incorporating electronic resources into instruction:

Reference [6] points at five fields in which teachers can use electronic resources:

- **Administration** of courses, where the electronic resources dramatically improve the *continuity* of the course and its social aspects.
- **Readings/materials** that enable teachers to provide students with wide variety of primary *and* secondary materials (including visual and audio materials) and that were once accessible only to experts. By utilizing these materials, students can become more active learners.
- **Papers/presentations** that turn to be easier to write with the help of electronic resources and media.
- **Lectures** that turn to be easier to prepare and to integrate into their content various electronic media with the help of electronic resources. These lectures can be saved *electronically* for later review and discussion.
- **Discussion** in and out of the classroom is made easier with the electronic discussion tools such as e-mail, conferencing software, and on-line chat services.

Reference [7] conducted a web-based survey of directors of medical school courses in radiology, where the survey dealt with the details of the courses and the use of computers and the web during the courses. Reference [7] found that the instructors, in the teaching case presentations, used film images displayed on a view box or by an overhead projector. The computers dedicated to student use were uncommon (28%). The web was used infrequently as a teaching resource, and a web site was not available in most courses. On the other hand, computer technical support was variable and usually provided by the course instructor.

III. RESEARCH METHODOLOGY

A. Research setting and participants:

This research was done in An-Najah National University which is the biggest university in the Palestinian Occupied Territories. The research participants are 202 first degree students who are in their third year of study. Table I describes the distribution of these participants regarding gender and speciality:

B. Research tools:

We used a questionnaire which has two parts. The first part collects data about the personal details of the participants: gender, speciality, level of the computer use, level of the Internet use, ownership of a computer at home, and ownership of Internet at home. The second part examines the constructs in which the research is interested: the characteristics of students, the characteristics of electronic resources, the facilities and support that the academic institute provides, the support provided by the instructor, the course's requirement, the student's use of electronic resources, the student's opinion of electronic resources. Table II reports the number of statements in each construct.

C. Reliability and validity of the questionnaire:

1) Reliability:

Two main types of statistical analyses can be done to establish reliability: stability over time (test/retest) and internal consistency. Test/retest reliability measures how consistent a measure is over time. The same test is administered twice and scores are correlated to yield a stability coefficient. The internal consistency is used to measure the homogeneity of scale items. It also enables determining redundant items and deciding if to shorten the measure. The internal consistency is examined using Cronbach's alpha. The questionnaire used in this research was

TABLE I.
THE PARTICIPANTS' DISTRIBUTION REGARDING GENDER AND SPECIALITY

| Gender \ Speciality | Education | Science | Total |
|---------------------|-----------|---------|-------|
| Feminine | 57 | 59 | 116 |
| Masculine | 58 | 28 | 86 |
| Total | 115 | 87 | 202 |

TABLE II.
QUESTIONNAIRE STATEMENTS OF EACH CONSTRUCT

| The construct | The number of statements |
|---|--------------------------|
| The characteristics of students | 1, 4, 8, 21, 27, 33, 35 |
| The characteristics of electronic resources | 31, 36 |
| The facilities and support that the academic institute provides | 15, 18, 20, 22, 29, 30 |
| The support provided by the instructor | 12, 14 |
| The course's requirement | 10, 11, 13 |
| The student's use of electronic resources | 9, 28, 32 |
| The student's opinion of electronic resources | 2, 5, 6, 7, 16, 17, 34 |
| Preparation need | 19, 23, 24 |

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TABLE III.
VALUES OF THE SCALES' CRONBACH'S ALPHA

| The scale | Cronbach's alpha value |
|---|------------------------|
| The characteristics of students | 0.609 |
| The facilities and support that the academic institute provides | 0.652 |
| The support provided by the instructor | 0.784 |
| The course's requirement | 0.726 |
| The student's use of electronic resources | 0.648 |
| The student's opinion of electronic resources | 0.693 |

examined for reliability using the second statistical analysis; i.e. by computing Cronbach's alpha. Using this analysis resulted in removing some of the items to make the internal consistency of the scales higher. Table III describes the values of the scales' Cronbach's alpha after removing the items.

2) Face Validity:

Face or content validity was determined by a group of 5 experts who judged how well the questionnaire items fit the studied subject, and their ratings were analyzed for each item. The experts' ratings ranged from 83% - 100% for relevance, and from 66% - 100% for clarity. The judges also related the comprehensiveness of the questionnaire to the studied constructs. It was graded from 89 - 100% for comprehensiveness. Based on the suggestion of the experts, five items were added, eleven items were re-framed and four were eliminated. Finally 36 items were chosen for the study. One of the four eliminated questions was eliminated for repetition, two for irrelevance and one for low concurrence.

IV. FINDINGS

Table IV describes the distribution of the participants regarding owning a computer at home and having access to internet at home. It shows that almost one third of the participants do not have internet access at home.

Table V describes the distribution of the participants their technological level. We see from table V that most of the participants have average technological level.

Table VI describes the percent of first degree students at An-Najah National University that made use of electronic media at a specific level. It shows that most first degree students who participated in the research had medium or high use of electronic resources.

Computing chi square for the relationship of the level of electronic resources use with gender or speciality, it was found that the relationship of the level of electronic resources use with any one of the mentioned constructs was positive and significant at level 0.05, while the relationship of the mentioned level with the technology level, the ownership of a computer, the internet access at home or the function of the internet use was positive and significant at the significance level 0.01.

Table VII describes the students' characteristics by level and the appropriate percents regarding their readiness to use electronic resources. It shows that small percent of students have low readiness for using electronic resources and that almost half of them have high readiness.

Computing chi square for the relationship of the level of students' readiness to use electronic resources with gender

TABLE IV.
THE PARTICIPANTS DISTRIBUTION REGARDING OWNING A COMPUTER AND INTERNET AT HOME (N=202)

| | I own a computer at home | I have access to Internet at home |
|-----|--------------------------|-----------------------------------|
| Yes | 8.9 | 32.7 |
| No | 91.1 | 67.3 |

TABLE V.
THE PARTICIPANTS' DISTRIBUTION REGARDING THEIR TECHNOLOGICAL LEVEL (N=202)

| Level | Percent |
|-----------|---------|
| Beginning | 18.3 |
| Average | 63.9 |
| Advanced | 17.8 |

TABLE VI.
LEVEL OF RESOURCES USE IN PERCENT (N=202)

| Level of use | Percent |
|--------------|---------|
| Low use | 9.4 |
| Medium use | 37.1 |
| High use | 53.5 |

TABLE VII.
LEVEL OF STUDENTS' READINESS TO USE ELECTRONIC RESOURCES IN PERCENT (N=202)

| Level of readiness | Percent |
|---|---------|
| Low readiness for electronic resources | .5 |
| moderate readiness for electronic resources | 52.0 |
| high readiness for electronic resources | 47.5 |

TABLE VIII.
LEVEL OF ELECTRONIC RESOURCES PROVISION BY THE ACADEMIC INSTITUTE IN PERCENT (N=202)

| Level of provision | Percent |
|--|---------|
| Low provision of electronic resources | 9.9 |
| moderate provision of electronic resources | 64.9 |
| high provision of electronic resources | 25.2 |

or speciality, it was found that the relationship of the level of students' readiness with any one of the mentioned constructs was not significant, while the relationship of the mentioned level with the technology level, the ownership of a computer, the function of the internet use, or the internet access at home was positive and significant at the significance level 0.01.

Table VIII describes the students' evaluation of the level of electronic resources provision by the academic institute (in this case An-Najah National University) and the appropriate percents regarding this level.

Table VIII shows that most students think that their academic institute provides moderate level of electronic resources.

Computing chi square for the relationship of the level of electronic resources provision by the academic institute with gender or owning a computer at home, it was found that this relationship with any one of the mentioned constructs was not significant, while the relationship of the mentioned level with the speciality, the function of the internet use, having an internet access at home or technology level was positive and significant at the significance level 0.01.

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Table IX describes the students' evaluation of the level of their instructor's support for their use of electronic resources level and the appropriate percents of the levels. It shows that the students have different evaluations of the instructor's support for them to use electronic resources.

Computing chi square for the relationship of the level of instructor's support with gender or owning a computer at home, it was found that this relationship with any one of the mentioned constructs was not significant, while the relationship of the mentioned level with technology level or function of internet use was positive and significant at the significance level 0.05. It is also significant with speciality or having internet access at home, but at significance level 0.01.

Table X describes the level of the course's requirement to use electronic resources and the appropriate percents of the levels. It shows that most students find their courses' requirements to be moderate regarding using electronic resources.

Computing chi square for the relationship of the level of course requirement with gender, technology level, or internet access at home it was found that this relationship with any one of the mentioned constructs was not significant, while the relationship of the mentioned level with the function of the internet use was positive and significant at the significance level of 0.05. It is also significant with speciality, owning a computer at home, but at significance level 0.01.

Table XI describes the students' opinion regarding the level of usefulness that results from using electronic resources and the appropriate percents of the levels. It shows that little percent of students find the usefulness of using electronic resources to be low.

Computing chi square for the relationship of the level of electronic resources usefulness as expressed by the student with gender it was found that this relationship was not significant, while the relationship of the mentioned level with owning a computer was positive and significant at the significance level of 0.05. It is also significant with speciality, technology level, the function of the internet use, or having an internet access, but at significance level 0.01.

Table XII describes the level of electronic resources' motivation for the students to use them in their academic tasks and the appropriate percents of the levels. It shows that more than half of the students consider the electronic resources characteristics to be highly motivating for use in tasks.

Computing chi square for the relationship of the level of electronic resources motivation as expressed by the student with the function of the internet use it was found that this relationship was not significant, while the relationship of the mentioned level with technology level was positive and significant at the significance level of 0.05. It is also significant with gender, speciality, owning a computer, or having an internet access, but at significance level 0.01.

Table XIII describes the correlations between the students' use of electronic resources from one side and from the other side other constructs. Correlations with student's use of electronic resources were computed with Pearson correlation coefficient (the independent variable and the dependant variables are all interval).

TABLE IX.
LEVEL OF INSTRUCTOR'S SUPPORT FOR THE STUDENTS TO USE
ELECTRONIC RESOURCES (N=202)

| Level of instructor's support | Percent |
|-------------------------------|---------|
| Low support | 33.7 |
| Moderate support | 30.2 |
| High support | 36.1 |

TABLE X.
LEVEL OF COURSES' REQUIREMENT TO USE ELECTRONIC RESOURCES
(N=202)

| Level of course's requirement to use electronic resources | Percent |
|---|---------|
| Low requirement | 13.4 |
| Moderate requirement | 68.3 |
| High requirement | 18.3 |

TABLE XI.
LEVEL OF USEFULNESS RESULTING FROM USING ELECTRONIC
RESOURCES (N=202)

| Level of usefulness from using electronic resources | Percent |
|---|---------|
| Low usefulness | 3.5 |
| Moderate usefulness | 55.4 |
| High usefulness | 42.1 |

TABLE XII.
LEVEL OF ELECTRONIC RESOURCES MOTIVATION FOR THE STUDENTS TO
USE THEM (N=202)

| Level of electronic resources motivation | Percent |
|--|---------|
| Low motivation | 7.9 |
| Moderate motivation | 37.6 |
| High motivation | 54.5 |

TABLE XIII.
CORRELATIONS WITH THE STUDENT'S USE OF ELECTRONIC RESOURCES

| | The correlation with student's use of resources |
|---------------------------|---|
| Institution facilities | .452** .000 |
| Instructor's support | .218** .002 |
| Course requirement | .331** .000 |
| Student's characteristics | .213** .002 |
| Resources characteristics | .375** .000 |

** Correlation is significant at the 0.01 level (2-tailed).

We see from table XIII that the student's use of electronic resources has significant strong positive relationships with the provision of electronic resources by the academic institution. It has significant moderate positive relationships with the resources characteristics and the course requirement, and has significant weak relationships with the instructor's support and the student's characteristics.

Table XIV describes the correlations between the students' opinion of electronic resources and the other constructs.

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TABLE XIV.
CORRELATIONS WITH THE STUDENT'S OPINION OF ELECTRONIC
RESOURCES

| | The correlation with student's opinion of electronic resources (N=202) |
|-------------------------------------|--|
| Institution facilities | .430** .000 |
| Instructor's support | .064 .363 |
| Course requirements | .042 .549 |
| Student's characteristics | .441** .000 |
| Resources characteristics | .419** .000 |
| Student's use of resources | .589** .000 |
| Level of student's use of resources | .592** .000 |

** Correlation is significant at the 0.01 level (2-tailed).

We see from table XIV that the student's opinion of electronic resources has significant strong positive relationships with student's use of electronic resources, level of this use, the academic institution available facilities, student's characteristics and resources characteristics. It does not have significant relationships with the instructor's support or the course requirement.

Descriptive and correlation statistics were applied to the collected data using the statistical package SPSS.

Coding the level of students' use of electronic resources:

The use of electronic resources was computed by taking the average of all the statements related with the construct "students' use of electronic resources". The level of use was considered to be low if the average was equal or less than 2.5, it was considered medium if the average was between 2.5 and 3.75, and it was considered high if it was more than 3.75.

V. DISCUSSION

A. Students' use of electronic resources:

The first question was: What is the level of electronic media use of first degree students in An-Najah National University?

The research findings indicate that more than one half of the participants had high level of electronic media use and more than one third had moderate level of electronic media use. These levels of use indicate the students' awareness of the role and benefits of electronic media use, which is represented in this research findings regarding the students' opinions of the usefulness of electronic media, where more than half of the participants gave the electronic resources moderate level of usefulness and more than forty percent of them gave them high level of usefulness.

The next five questions were about the relationships of the students' use of electronic resources with the characteristics of students, the characteristics of electronic resources, the facilities and support that an academic institute provides, the support that an instructor provides, and

the course's requirement. The research findings show that there is significant strong positive relationship between the students' electronic use and the provision of institution's facilities. Further, there are significant moderate positive relationships with the resources characteristics and the course requirement, and significant weak positive characteristics with the instructor's support and the student's characteristics. What these findings say is that no matter what the students' characteristics are, regarding their readiness to use electronic resources, what influence their use of electronic resources are the provision of these resources at the academic institute, the course requirement and the resources characteristics. The instructor's support and the student's characteristics have less influence on the students' use of electronic resources.

The influence of the characteristics of electronic resources on their use by the first degree students at An-Najah National university agrees with the findings of [4] which pointed that one property that hinders the use of a library's electronic resources is their characteristics, particularly that the resources are not considered straightforward.

The influence of the course requirement can be associated with the policy of instructors regarding using electronic resources. This influence of instructors in particular and of the community in general is recognized in literature, for example [5] found that students were responsive to a great degree to recommendations of specific resources made by their teachers, friends, or a librarian.

The strong positive influence of the provision of institution's facilities on the students' use of electronic resources is understandable, for this provision encourages the students to decide on using the resources, especially when almost one third of the students do not have access to the internet at home.

B. The students' opinions about electronic resources:

The next five research questions were about the relationships of the students' opinion about electronic resources with the characteristics of students, the characteristics of electronic resources, the facilities and support that an academic institute provides, the support that an instructor provides, and the course's requirement. The research findings show that there are significant strong positive relationships with student's use of electronic resources, level of this use, the academic institution available facilities, student's characteristics and resources characteristics. The influence of electronic resources use on the students' opinion regarding this use can be explained by integrating activity theory and ecological psychology as done in [10], which suggested the following figure to illustrate learning as intention – action – reflection:

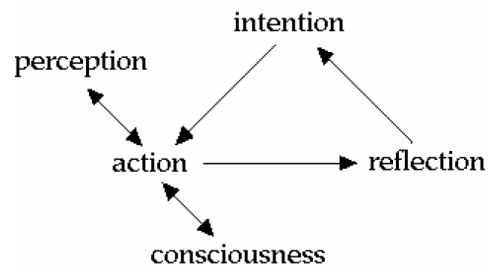


Figure 1. Learning as intention – action -reflection

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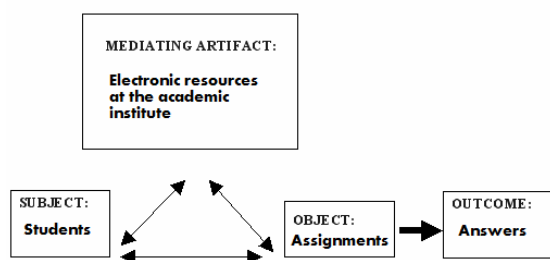


Figure 2. Subjects act on objects, directly or through and artifact, to produce an outcome

As a result of learning, according to this approach, the intention – action – reflection results in consciousness and perception, in our case results in the opinions expressed by the students regarding the usefulness of electronic resources. The influence of the provision of the academic institute facilities, student's characteristics and resources characteristics can be explained by another framework of activity theory, which is shown in figure 2.

In our research, students act on their assignments through electronic resources to produce answers. Doing so, they develop opinions about these opinions. Thus, what may influence the students' opinions are: the initial characteristics of the subjects, the initial characteristics of the artifacts (here the electronic resources), and the initial situation of those resources at the academic institute.

VI. CONCLUSIONS

In this research we wanted to verify what influences first degree university students' use of electronic resources and their opinions regarding this use. We found that more than one half of the participants had high level of electronic media use and more than one third had moderate level of electronic media use. These levels of use indicate the students' awareness of the role and benefits of electronic media use,

We also found that the student's use of electronic resources had significant strong positive relationships with the provision of electronic resources by the academic institution. It had significant moderate positive relationships with the resources characteristics and the course requirement, and had significant weak relationships with the instructor's support and the student's characteristics. We explained these relationships as resulting from the influence of the surrounding community.

Regarding the students' opinions about the use of electronic resources, we found that the student's opinion of electronic resources has significant strong positive relationships with student's use of electronic resources, level of this use, the academic institution available facilities, student's characteristics and resources characteristics. It does not have significant relationships with the instructor's support or the course requirement. We explained these relationships depending on activity theory and its integration with ecological psychology.

Further research is needed with the same research questions but with postgraduate students. Another issue is what influences the instructors' use of electronic resources and what influences universities libraries managers regarding adding different types of electronic resources to the libraries.

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APPENDIX

The electronic resources questionnaire

Part I:

Personal details: Please circle what fits you.

- 1 Gender ☐ male ☐ female
- 2 Speciality ☐ education ☐ science
- 3 I consider myself an ☐ advanced ☐ intermediate ☐ beginner user of the computer.
- 4 I consider myself an ☐ advanced ☐ intermediate ☐ beginner user of the Internet.
- 5 I own a computer at home ☐ Yes ☐ No If you answered Yes in 6 please proceed to 6.
- 6 I have access to Internet at home ☐ Yes ☐ No

FACTORS INFLUENCING STUDENTS' USE OF ELECTRONIC RESOURCES AND THEIR OPINIONS ABOUT THIS USE:
THE CASE OF STUDENTS AT AN-NAJAH NATIONAL UNIVERSITY

Part II:

For each of the statements below please indicate the extent of your agreement or disagreement by placing a tick in the appropriate box.

The response scale is as follows:

- 1 Strongly disagree
- 2 Disagree
- 3 Undecided or Neutral
- 4 Agree
- 5 Strongly agree

| | | 1 | 2 | 3 | 4 | 5 |
|----|--|---|---|---|---|---|
| 1 | It is easy for me to use the electronic resources | | | | | |
| 2 | I think that using electronic resources support my learning | | | | | |
| 3 | I don't hesitate to use e resource when they are available | | | | | |
| 4 | for me, using electronic resources are easier than paper resources | | | | | |
| 5 | Information in electronic resources could be relied on | | | | | |
| 6 | I look at searching electronic resources as a waste of time | | | | | |
| 7 | I see no need for the university student to use electronic resources | | | | | |
| 8 | my computer skills help me to use electronic resources | | | | | |
| 9 | I rely on electronic resources to do my assignments | | | | | |
| 10 | my use of electronic resources depends on the requirements of the instructor | | | | | |
| 11 | Electronic resources constitute an essential part of my courses | | | | | |
| 12 | The instructor has an important role in developing my searching skills of electronic resources | | | | | |
| 13 | My instructors include electronic resources in the courses' syllabuses. | | | | | |
| 14 | The instructor's support enhance my use of electronic resources | | | | | |
| 15 | The availability of computer and internet in the university enhances my use of electronic resources | | | | | |
| 16 | Resources on the www contribute to my achievements | | | | | |
| 17 | Electronic journals provided by the university's library contribute to my achievements | | | | | |
| 18 | technical support is available at the university's library | | | | | |
| 19 | It is necessary for university students to be trained in the use of electronic resources available at the University | | | | | |

| | | | | | | |
|----|--|--|--|--|--|--|
| 20 | At the university I find help with the difficulties in using electronic resources | | | | | |
| 21 | My English skills hinders me from taking advantage of electronic resources | | | | | |
| 22 | courses in the university prepare me well to use electronic resources | | | | | |
| 23 | It is necessary to hold workshops for electronic resources for university students | | | | | |
| 24 | It is difficult to take advantage of the possibilities of the computer and the Internet without training through specialized courses | | | | | |
| 25 | I use computer and internet as complement to the traditional way of learning | | | | | |
| 26 | For me, computers and the internet are substitute to traditional resources | | | | | |
| 27 | I participate in electronic resources training courses | | | | | |
| 28 | In general, I can not dispense with the computer and the Internet in learning | | | | | |
| 29 | computers and the internet are available at the university | | | | | |
| 30 | University Library offers electronic resources suitable for my learning | | | | | |
| 31 | The Web is full of scientific resources needed to my learning | | | | | |
| 32 | Sometimes I access electronic resources in the library from outside the university | | | | | |
| 33 | I often try to practice electronic resources new to me | | | | | |
| 34 | Dealing with web resources saves time and effort | | | | | |
| 35 | I do not see anything wrong with consulting colleagues on how to deal with electronic resources | | | | | |
| 36 | For me, using electronic resources is an economic burden | | | | | |